



Migration Strategies

When developing strategies to migrate an organization to Voice over IP ("VoIP") or to IP Telephony ("IPT") GE IT Solutions engineers use specific tools and methodologies based upon both vendor specific and industry best practices. These methodologies revolve around the design, deployment and management of VoIP and IPT systems that will enhance your business communications and provide your organization with a sound infrastructure to deploy best in class IP communications services from a wide variety of vendors and manufactures. While GE ITS centers it's IP communications solution around the Cisco Architecture for Voice Video and Integrated Data ("AVVID") it is our intention to provide our customers with a solution that provides a stable foundation for a heterogeneous environment that will meet the requirements of today, and allow for a stable and easy integration of future technologies and strategies.

I. Developing a Strategy – Building the Foundation

The first step in a successful migration to VoIP/IPT is to develop a sound strategy that takes into account the specific requirements of your operation. The primary focus of this step is to collect the pertinent information that will allow us to develop a customized solution that meet's your goals and needs. To accomplish this we employ certain tools to gather and correlate information in a way that will ensure a smooth migration:

A. Business Needs Analysis

Understanding how voice and data communications impacts your business is the single most important basis for any decision. Without a clear understanding of your business goals and requirements, IT planning and support cannot accurately and efficiently provide a stable environment to facilitate the day-to-day operations of your company. GE ITS requires an understanding of the business goals and expectations of an organization in order to make an accurate assessment of their voice and data infrastructure. While this is the least technical portion of the assessment, it is the most important, for if GE ITS does not understand your business, we cannot accurately provide you with a assessment that will provide you with the information you need to grow and support your IT infrastructure.

B. Data Network Assessment

GE ITS will perform a network assessment that will inventory relevant equipment, applications and performance characteristics of the data network. This will include an inventory of equipment and an audit of existing traffic volumes and patterns. Using available tools systems, engineers will collect data on all potential converged infrastructure traffic flows. Station message detail reporting (SMDR) and billing records can be used to determine legacy call volumes, and network management tools can be used to collect key statistics on the IP data network. Numerous tools are available to assist in the collection and analysis of this data.

C. Site Specifications

This Site Requirements Specification should provide details of the physical, electrical and environmental requirements required by the customer in order to prepare their site to accommodate the equipment to be deployed. This should include cable specifications, circuit specifications (site to site, ISDN remote access, etc.), and roles and responsibilities (who will be responsible for providing cables - partner/customer, etc.) The template should be populated for a single customer site with separate documents for each site that the customer network consists of if each site has different requirements.

D. VoIP/Telephony Readiness Assessment

Using tools developed internally and by vendors, GE ITS will perform an IP communications readiness assessment. This phase will use the information gathered in previous segments, as well as interviews and research into carriers, billing reports, voice hardware, trunk lines, local and long distance calling patterns, voice features, voice mail requirements, and other information to determine whether your organization is ready to deploy VoIP/IPT immediately, or, if not, what



Cost Saving Measures

Six Sigma Methodologies

Through a data intensive quality process, Six Sigma improves processes, which drive repeatable procedures and reduces overall costs. Utilizing Six Sigma methodologies and practices, GE IT Solutions can assist the State of Arizona to realize cost savings through the repeatable best practice processes for service delivery implementation. Our IP Telephony design and implementation services follow a specific methodology to ensure consistent service delivery for location-to-location and from engineer-to-engineer. Best of breed processes are the benchmark by which we operate. They will enable GEITS to professionally carry out these relevant project tasks, in addition to any contingencies that may arise along the way. These processes will be applied to all major capabilities and deliverables set forth in this project. The entire General Electric organization is deeply involved with, and committed to the Six Sigma quality methodology, which refines processes and produces the best practices such as those required for a successful statewide telecommunications replacement project.

GE Aircraft Engines, where there is no room for error, was the first GE business to adopt Six Sigma methodologies. Since then, GE's success with Six Sigma has exceeded our most optimistic predictions. All GE employees are trained in the strategy, statistical tools and techniques of Six Sigma quality. We embrace Six Sigma's customer-focused, data-driven philosophy and apply it to everything we do. It will be the basis for the entire State of Arizona project.

Genius Methodology™ Service Delivery Kits

The Genius Methodology uses a series of structured Service Delivery Kits (Genius Kits) that leverage the best practices and knowledge of our field experts. Senior Consultants and Systems Engineers contribute to a structured delivery kit to create a “best practice, best process, best tool” system of delivering specific solutions. A Project Plan is used to model the delivery process and is used to enforce the structure. This enables us to involve several levels of repeatable processes for “hand offs” to associated engineering, project leaders or management staff involved in the solution design, implementation and management process.

To achieve Six Sigma Quality, a process must produce no more than 3.4 defects per million opportunities. An opportunity is defined as a chance for nonconformance, or not meeting the required specifications. This means that we need to be nearly flawless in executing our key processes. Six Sigma is a vision we strive toward and a part of our business culture. Our Customers value consistent, predictable business processes that deliver world-class levels of quality. That is what Six Sigma strives to produce while maintaining cost awareness.

With the utilization of Six Sigma methodologies, this enables GE to maintain and reduce costs throughout any phased implementations and across all of our businesses. With the implementation of Six Sigma rigor, GE ITS can provide this same level of processes to insure the successful implementation of the phased approach for the State of Arizona and the scope of this project with a focus on cost consciousness. Six Sigma can also be utilized with regards to any associated projects or processes that could impact the delivery of this solution thus minimizing the possibility of integration situations and provide for a successful implementation/integration.



Utilization of Existing Hardware/Software

The information gained during the network assessment for the State of Arizona Plan/Design phase will allow GE ITS to document detailed hardware and software inventories. This will allow GE ITS to provide additional cost savings to the State of Arizona by utilizing the existing hardware or software in all cases where applicable. If the existing infrastructure has the ability to manage and handle proposed traffic and configuration needs, justification for additional hardware will be minimized. Adding modules to existing hardware and upgrading any software will allow the State of Arizona the ability to best utilize budgetary guidelines.

At the same time, this will allow GE ITS to assess the needs and current requirements for any maintenance costs associated with the current infrastructure, allowing for a re-evaluation or a needs assessment for these maintenance agreements and their level of support associated with each item. Through the use of this evaluation, GE ITS may provide the State of Arizona additional cost savings with regards to adjustments of maintenance contracts, co-termination of maintenance contracts, and consolidation of these contracts for ease of administrative needs and costs associated.

Cisco Gold Partner Status

As a Certified Cisco Gold Partner, GE IT Solutions has the resource framework and expertise to sell, plan, design, implement and operate Cisco networking solutions. To earn Gold Certification GE IT Solutions had to meet or surpass the stringent personnel, training, customer satisfaction, specialization and post sales support requirements set forth by Cisco. The Cisco Channel Partner Program offers its certified channel partners state of the art technical as well as sales training. Gold Certified Partners are recognized and rewarded for having some of the industry's best trained network technicians who are capable of achieving and demonstrating the highest level of expertise in planning, designing, implementing and supporting Cisco network solutions. This well trained team of network technicians is audited annually to make sure they are consistently delivering industry-leading support and maintaining the rigorous Cisco standards for network expertise and support capabilities. With specializations in IP Telephony, Security, Content Networking and Wireless technologies, GE IT solutions has secured the training; skills and knowledge to play a pivotal role in the successful implementation of the State of Arizona's IP Telephony/VoIP solution roll out. The utilization of the highly skilled team of GE ITS engineers can lead to additional cost savings for the State of Arizona throughout the implementation of this project by mitigating financial risks associated with poor planning, design and implementation.

As a Cisco Gold Partner GE ITS also has the ability to work with the vendor to possibly provide additional cost savings by providing an upgrade path for the existing network infrastructure. This option will be further evaluated as the State of Arizona opportunity progresses.

Reduced Training and Administrative Costs

Our proposal incorporates a comprehensive plan for managing the project from initial planning and procurement to final performance and acceptance testing, as well as ongoing network monitoring and management. Our local team of engineering, project management and business management personnel will provide you with the type and level of partner resources necessary for a successful engagement. By Including the Remote Monitoring and Management (RMM) solution offering, there is an additional cost savings to the State of Arizona that can be realized in reduced training costs for solution support as well as a reduction in administrative costs, which would be required to provide on going maintenance and support for the solution once implemented.



With the utilization of Remote Monitoring and Management (RMM), additional costs savings are recognized through the following areas:

- ✓ Network specialists who monitor and protect the customer's IT infrastructure on a 24x7 basis. ISO 9002 processes and procedures ensure rapid response to, and resolution of network incidents minimizing downtime and improving productivity.
- ✓ State of Arizona can acquire a fully operational out-tasked network management solution that complements internal IT resources to help maintain in-house expertise while maintaining costs.
- ✓ Operations Efficiency / Metrics of Excellence:
 - Automated problem detection and ticket generation - Less than 2% of all tickets are generated by a customer phone call allowing more time for administrative or project assignments.
 - Mean Time to Action (MTTA) less than 2 minutes across all customers under management providing a quick response to managed solutions.
 - 82% of problems resolved without dispatching resources, less downtime.
 - 41% reduction in average failures per device, less downtime.
- ✓ The ability for the State of Arizona to access highly skilled professionals trained to manage complex network environments utilizing multi-vendor technologies with the goal of improving the reliability of the IT infrastructure and creating a productive environment.
- ✓ A tiered pricing model for RMM results in competitive prices based on the level of service selected as well as the number and type (network, security server, application) of service plans customized to meet the needs and requirements of the State of Arizona and future growth.

These are just a few of the costs savings measures that can be utilized through the use of Remote Monitoring and Management from GE ITS. Several more justifications can be provided as we move forward with the State of Arizona.



Recommended Service Delivery Model

GE IT Solutions can provide an integrated “end-to-end” solution for the State of Arizona’s IP Telephony/VoIP needs, making the transition to this technology seamless. The distinguishing factors that identify GE IT Solution’s essential value to the State of Arizona are our people, processes and systems and our commitment to Six Sigma Quality principles and practices. GE IT Solutions will provide highly trained and experienced Project Managers as well as Design and Implementation Engineers who maintain industry standard certifications to provide all service delivery requirements for the proposed solution. A Program Manager will be assigned as a Single Point of Contact (SPOC) to ensure the successful completion of this engagement. We have made the investment in time and capital and have made the necessary effort to drive continuous customer satisfaction improvement across our business units. GE IT Solutions offers a flexible, measurable, reliable and scaleable solution for our regional and national customers. Utilizing Six Sigma methodologies for process improvement and quality control GE IT Solutions will group the service delivery requirements for this engagement into four project phases.

Below, you will find the four phases outlined and detailed:

- **Plan** – Solution Assessment, Complete Business Analysis and Validation of your plan
- **Design** – Complete high level and detail design of your solution or validation of your design
- **Implement** – Staging, deployment, documentation, and training
- **Manage** – Full suite of technical support services for maintenance, monitoring and management.

Plan

Business Solution Development

As the high-level business needs becomes more clear, GE ITS will need to gather more detailed information to assess the application needs and assist the State of Arizona in building the business case for this solution. The following is a couple of procedural steps that GE ITS has followed with our current IP Telephony/VOIP customers for their successful implementations.

1. Conduct Detailed Interviews
2. Develop Solution/Application Story

Technical Solution Development

This is a preliminary assessment of technology and its potential to meet the business requirements.

1. Identify Initial Application Design Requirements
2. Perform Initial Audit of Existing Infrastructure Architecture
3. Perform Initial Traffic Analysis
4. Perform an Initial Hardware Gap Analysis
5. Perform Initial Legacy Integration Analysis
6. Develop Initial Solution Design
7. Develop Initial Operations/Support Framework
8. Identify Initial Service Requirements
9. Develop Initial Statement of Work

Step 1: Customer Requirements Verification

In order to ensure the most appropriate design, GE ITS will review the initial requirements and ensure that all parties agree to the preliminary assessment. GE ITS and the State of Arizona will discuss design alternatives and make sure the State of Arizona understands the implications. The system designer will take caution to meet the specific business requirements so that the State of Arizona’s expectations are met.



Step 2: Project Kickoff

A kick-off meeting will serve to further define the State of Arizona's responsibilities, assign dates, and clarify any questions or concerns.

1. Internal Kickoff Meeting
2. Customer Kickoff Meeting

Step 3: Conduct a Planning Workshop

This interactive session between the State of Arizona and GE ITS will be used to clarify the requirements and define expectations, as well as further define the existing environment.

1. Existing Network Review
2. Define Client Requirements and Expectations
3. Prepare High Level Project Plan
4. Designate Project Management Structure
5. Establish Project Communication Plan
6. Create Customer and GE IT Solutions To Do Lists and Action Plans
7. Develop a Training Strategy
8. Develop a Support Strategy
9. Conduct Risk Assessment
10. Determine Organization Change Readiness
11. Review Project Templates
12. Obtain Final Customer Acceptance

Step 4: Low Level Site Survey

In this step, GE ITS will assist the State of Arizona in conducting an overview to understand the adequacy of physical infrastructure. The assessment will focus on requirements for space, cabling, conduits, racks and patch panels, power, HVAC, as they pertain to acquiring and deploying a new system. More detailed site surveys will be performed prior to installation during the implementation phase.

1. Develop Site Specification
2. Perform an Inventory of Audit of Existing Traffic Volumes and Patterns
3. Survey the Network and Inventory
4. Provide for Network Security

Design

Step 1: Host a Design Workshop

The design workshop will be a collaborative effort between the State of Arizona's resources and the GE ITS design engineers. This design workshop will have two goals:

- To use the requirements defined in the planning phase to craft a solution that meets or exceeds the State of Arizona's goals and expectations
 - To provide the detailed data necessary to complete the design phase and develop a solution. The design will support the State of Arizona's business and technical requirements, including security, quality of service (QoS), and system management.
1. Generate a Low-Level Migration/Integration Strategy
 2. Perform a Gap Analysis between Existing and Proposed System



3. Finalize Training Strategy
4. Finalize Support Strategy
5. Finalize Network Security Strategy

Step 2: Create Low Level Design

In this step, GE ITS will develop the application design specifics, benchmark the design against the requirements, and formulate the Implementation plan, including the expectations of the State of Arizona. The Low Level Design (LLD) is the core of the final design deliverable. It provides the proposed solution topology and articulates how the proposed design fulfills the requirements outlined during the planning workshop.

1. Conduct Detailed Design-Business Requirements Gap Analysis
2. Develop Detailed Application Design
3. Develop System Back-up, Rollback and Recovery Strategy
4. Complete Detailed Site Survey and Network Topology
5. Develop Implementation Plan
6. Finalize the State of Arizona and GE ITS To Do Lists and Action Plans

Step 3: Detailed Design Review

The project manager, the State of Arizona, installation chief, and principal design engineer will review the details of the design so that all parties are in agreement regarding the proposed design. The State of Arizona and the design engineer will review with the team any situations that may have changed from the time of the proposal design. If there are changes, a revised design will be developed and all parties will sign off on the new design. This is the go forward installation design and would be the final design for developing the implementation project plan. GE ITS will present the final design to the State of Arizona and will gain documented acceptance before beginning the Implementation Phase.

1. Conduct Integration Analysis
2. Finalize Detailed Design Documents
3. Conduct Internal Detailed Design Review
4. Obtain Customer Solution Acceptance

Implement

Step 1: Implementation Planning

As the State of Arizona prepares for implementation; this step will clarify the plan set forth in the design phase and confirm the expectations for the installation.

1. Hold Implementation Planning Meeting
2. Develop Response and Escalation Plan
3. Verify the State of Arizona and GE IT Solutions To Do Lists and Action Plans
4. Procurement of Equipment/Software/Services

Step 2: Project Monitor and Control

Establishing processes, such as status reporting, change management, issue resolution, and quality assurance, to monitor progress and mitigate risk, will safeguard the project health.

1. Status Reporting
2. Change Management



3. Issue/Risk Management
4. Quality Control (Six Sigma Methodologies)

Step 3: Site Preparation

In previous phases, GE ITS will assist the State of Arizona in completing a survey of the infrastructure that will affect installation, as well as beginning to take steps to address deficiencies. Prior to installation, it is imperative that a thorough site survey is conducted and that the state of readiness of all infrastructure components is assessed. Considerations will be given to:

- Equipment Room Readiness
 - Power, grounding, and HVAC
 - Conduit, Cabling, Patch Panels and Racks
 - Point of Demarcation for Telco Services
1. Validate Site Specification
 2. Complete Site Survey
 3. Preparation and Verification of Site

Step 4: Install and Configure

GE ITS may stage the equipment/software to ensure components are ready for operation. The need for staging depends on the size and complexity of the engagement. The staging would incorporate all of the major design features that exist in the network design document. The main purpose of Staging the network in this way is to maximize the efficiency of the Implementation Process, to identify any faulty components, and to trial the network configuration prior to rollout. The engineer will stage the equipment/software and, after confirming operability, install/configure the equipment/software at the State of Arizona sites. In general, this step entails equipment/software staging, installation, testing, install issue resolution, re-test, user migration, and acceptance. Stage Equipment/Software

1. Install Equipment/Server software
2. Load, Configure, Integrate and Test Client Software

Step 5: Test and Acceptance

Per the requirements set forth in the solution acceptance criteria, the field engineer will test and document the solution. As with any new system, issues will arise and, therefore, it is imperative that GE ITS provide resources onsite (or online) to monitor the systems as well as take and resolve trouble calls. The customer, project manager, and implementation lead should review the agreed-upon deliverables, and assess the system.

1. Test the Solution
2. Network Ready For Use Acceptance

Step 6: Knowledge Handoff

GE ITS will prepare to complete the implementation phase by ensuring the State of Arizona's system administration team and end users obtain the knowledge to realize the benefits of the solution.

1. Train the Administrator
2. Post Implementation Problem Escalation Training

Step 7: Project Completion Review

GE ITS will complete the implementation phase by assisting the State of Arizona's transition to operations, including the lessons learned documentation, highlighting the State of Arizona's unique design considerations, and obtaining the customer's letter of acceptance.



1. Perform an Internal Review to Determine Lessons Learned
2. Delivery of Project Documentation
3. Project Acceptance

Manage

GE ITS offers a suite of subscription-based remote WAN, LAN, VLAN, VPN, Wireless, Optical, Server, IP Telephony and Security network management services responding to the growing demand for flexible out-tasked management of network infrastructures. Delivered from GE ITS' Enterprise Operations Center (EOC), Remote Monitoring and Management (RMM) Services provide 24x7 proactive monitoring, end-to-end management of network issues and detailed performance reporting. Providing port level monitoring and management to enable delivery of service levels throughout the entire network down through to the device and port level. This Service offering is targeted at large organizations with complex mission critical e-business networks requiring high availability. GE ITS' service web center, our real-time customer interface and management dashboard, provides a centralized view into the health, performance and security of enterprise IT Infrastructures, 24x7x365.

Main features include:

- Advanced monitoring - extensive proactive monitoring features to help prevent outages.
- Enhanced problem management - through direct access to the Cisco TAC (for SMARTnet Customers).
- Extended inventory database – collection of detailed device information down to the element and port level, such as, chassis information, module information, port number, name, etc.
- Easy MACs (Moves, Adds and Changes) - Customer driven, automated and manual Soft MACs.
- Security management - switch and port access security, including management of access accounts, password authentication, port access security for maintenance and changes and device intrusion prevention.
- Rapid delivery - modular approach to Remote Monitoring and Management results in rapid delivery.
- Expandability - RMM services allow the expansion of monitoring services to grow with the customers needs.

Detailed processes are followed for every aspect of day-to-day management. Additionally, a step-by-step process is carefully followed for implementing new service to mitigate complications and provide a successful transition. Once the contract is signed the RMM project team will provide a comprehensive new customer introduction and transition plan. The Implementation of the RMM Solution can be seamlessly integrated in the first three phases of implementation, all based on the State of Arizona's needs and requirements.

- Plan/Design:
 - Detailed solution aligned to business requirements
 - Coordinate design with remote management team*
- Implement
 - With thousands of technicians across North America
 - Utilization of Six-Sigma developed 'GENius kits' for deployment
 - Seamless processes for product procurement and staging.
 - Remote management services are coordinated with installation phases*
- Manage
 - Avoid significant investment in additional internal training and support tools.
 - Seamless transition due to coordination with design engineers and project managers.*

GE ITS Network Management services offer flexibility of choice to best align GE ITS' out-tasked expertise with the State of Arizona's in-house capabilities and resources, while reducing the overall cost of IT operations.



needs to be done to enable your IT infrastructure to support these services in the near term and prepare it for the future.

II. Developing a Solution – Meeting Your Needs

The next step in a successful migration is designing a solution that meets your needs as an organization. This solution should use the information gathered by various audits and assessments to develop a detailed solution. At this point several design considerations are made and a direction is chosen that will best suit your organization.

After careful review of the various documents provided by the State of Arizona, it is the feeling of GE IT Solutions that the state would prefer to pursue a hybrid design that would allow the State to carefully and smoothly migrate their existing communications architecture to a full converged IP communications system. The chosen architecture will be designed based upon a sound data and voice infrastructure using proven technologies including but not limited to: VoIP, VoATM, VoFR, MGCP, H.323, G.711, G.728, AMIS, etc. At the same time, GE ITS designs will take new technologies into account in order to enable the State of Arizona to provide cutting edge solutions using SIP, IVR, IPCC, wireless, CDMA, and other emerging technologies.

III. A Phased Migration – A Path to success

GE IT Solutions takes a phased approach when developing any migration strategy. When taking a phased approach, each phase is defined by a set of specific considerations, deliverables and milestones. These characteristics, when properly scheduled, will allow both organizations to assess the progress of the migration and to allow for changes in business focus and advances in technologies. These phases are also designed so that at any particular phase of the migration they may exit the overall plan and either redesign the solution, reschedule the migration, or exit from the solution completely with no loss of functionality or with reasonable ability to change direction.

When planning a converged network, the organization has many options when choosing the correct path to success. Depending on what cost savings are realized, what specific features are required and when these services need to be available, the proper strategy may change. When developing strategies for converged network deployments, GE ITS has worked with a few different migration strategies:

<u>Strategy 1:</u> <ul style="list-style-type: none">• Perform Voice/Data Network Assessments• Deploy VoIP Service at Major Sites A, B, C, D, etc.• Pilot Centralized IPT at one Major Site A• Roll out IP voice mail if required• Pilot Centralized IPT at minor sites A1, A2, A3, etc.• Deploy VoIP services to Remaining Minor Sites• Rollout Additional IPT sites as requested• Roll out IPC applications if required	<u>Strategy 2:</u> <ul style="list-style-type: none">• Perform Voice/Data Network Assessments• Pilot Centralized IPT at one Major Site A• Pilot Centralized IPT at minor sites A1, A2, A3, etc.• Deploy VoIP Service at remaining Major Sites B, C, D, etc.• Deploy VoIP Service at remaining Minor Sites• Rollout IPT at remaining sites if requested.• Roll out IP voice mail if required• Roll out IPC applications if required
<u>Strategy 3:</u> <ul style="list-style-type: none">• Perform Voice/Data Network Assessments• Pilot Centralized IPT at one Major Site A• Roll out IP voice mail if required• Pilot Centralized IPT at minor sites A1, A2, A3, etc.• Rollout Next Major Site B with IPT and VoIP• Rollout Minor sites B1, B2, B3 with IPT as needed.• Repeat above steps until all sites completed.	<u>Strategy 4:</u> <ul style="list-style-type: none">• Perform Voice/Data Network Assessments• Deploy VoIP Service at Major Sites A, B, C, D, etc.• Deploy VoIP Service at remaining Minor Sites• Pilot Centralized IPT at one Major Site A• Roll out IP voice mail if required• Pilot Centralized IPT at minor sites A1, A2, A3, etc.• Rollout IPT at remaining sites if requested.• Roll out IPC applications if required



While specific strategies and phases can only be developed when a full understanding of the existing environment and solution is available, based upon current information provided by the state, GE ITS can summarize the migration with an example of strategy 1 with the following phases:

A. Phase 1 – Perform Required Assessments

- Perform Business Needs Assessment
- Perform Data Network Assessment
- Develop Site Specifications
- Perform VoIP/IPT Readiness Assessments

Once completed, the State of Arizona will make decisions around what technologies to implement and the overall goals of the converged system. Data circuit performance and requirements will be identified for all phases so that the state may prepare for increases in bandwidth needed to accomplish each phase. This recommendation will be developed with technologies that support a phased increase in bandwidth at major sites so as to limit the cost of increased bandwidth to port speeds and not local loop charges. These recommendations will also follow state provided guidelines around carriers and overall plans so as not to install a solution that is unnecessary in the event that the state exits from this course at any point.

At this point the State will also be made aware of any LAN/WAN upgrades that may need to take place to enable these technologies on a site-by-site basis. These upgrades can be accomplished with the aid of GE ITS as needed and in parallel to the converged upgrade to save time and prepare for additional phases. Additionally, the state will also be made aware of any sites that may not be suitable for any type of converged network due to their remote location or small user base. Solutions for these sites will be developed on a site-by-site basis.

B. Phase 2 – Identification and Migration of Major Sites to VoIP

As the State of Arizona has already begun deploying a VoIP infrastructure, GE ITS will build off this current deployment and develop a plan that will take advantage of the work performed and enhance it in such a way as to provide a path to future phases. This phase will leave all local call processing in place and migrate internal (or intra organizational) calling to a converged system. This will take advantage of existing data circuits and may entail upgrading of existing circuits or adding new circuits to enable this portion of the migration. Based upon information gathered in previous phases, this part of the migration will determine a strategy to develop a call routing architecture based either upon administrative domain (e.g.: departmental or sub-organization boundaries) or on region (e.g.: based on county or physical proximity.)

Steps:

1. Identify best locations to centralize inter-location call processing and to act as major distribution sites (geographically or departmentally)
2. Identify best locations to regionalize Toll-Bypass (for intra-state long distance calling.)
3. Identify call routing for internal toll-bypass (between governmental locations)
4. Categorize branches for VoIP migration based upon ease of migration and importance.
5. Migrate internal calls between major distribution sites to VoIP.
6. Migrate Long Distance Calling to VoIP
7. Provide redundant calling methods in the event of a data circuit failure.
8. Install Remote Monitoring and Management capabilities.

Exit Strategy:

At this point a base infrastructure for Toll Bypass and VoIP will be in place. Direction can then be taken to add more sites to the overall VoIP infrastructure and to enable other applications such as IP Telephony. At this point the state of Arizona can move to the next phase or to delay further phases, or exit from the solution entirely.



C. Phase 3 – IP Telephony Pilot

At this point a pilot of IP Telephony is appropriate. By taking advantage of cost savings from Toll-Bypass and easier management of a converged data/voice system developed previously, an IPT pilot can offer increased productivity and further cost savings in management as well as ease of migration of smaller sites to a VoIP design. GE ITS would recommend that the State of Arizona choose one of the major sites identified in the previous step as an IPT pilot site. This site would maintain a hybrid call processing system so that legacy users and IPT users can work seamlessly. This Strategy will allow the State to develop experience and familiarity with IPT and to develop future strategies for their converged systems. By limiting this pilot to one site and maintaining a hybrid system, the State reserves the ability to postpone future IPT deployments or to abandon such plans if it sees fit.

Steps:

1. Identify Site for IP Telephony.
2. Design integrated solution and identify required hardware to achieve hybrid solution.
3. Identify other remote sites as key switch sites to use the Centralized IPT system.
4. Identify Voice Mail and Personal Assistant features
5. Perform a detailed IPT Readiness assessment of the LAN and Voice infrastructure
6. Upgrade existing LAN if needed.
7. Perform IPT Integration to legacy PBX and Voice Mail systems.
8. Deploy IPT Pilot users.
9. Deploy Remote Monitoring and Management Services.
10. Integrate IP Enabled Voice Mail and Services
11. Install additional features and applications as requested.
12. Enable IPT at select remote sites using VoIP and IPT Redundancy Features.
13. Finalize RMM features

Exit Strategies:

At multiple points within this phase, the state may extract itself from the solution in order to pursue different strategies or none at all. Within this phase the State of Arizona may exit at steps 5, 6, 10, 11, or 12.

D. Phase 4 – Voice Mail Migration (optional)

In this phase the state voice mail system will be migrated to a IP voice mail system if desired. During previous phases, the State will have integrated the VoIP and IPT systems with existing voice mail services. The state may have chosen to implement voice mail on a site-by-site basis along with the IPT rollouts. If this was the case, this phase would be reserved to finalize the cutover and removal of the legacy voice mail system at all sites where this was possible. This phase may not be required at all if all sites will use the Legacy Voice Mail system instead of deploying an IP voice mail system.

E. Phase 5 – Prepare additional minor sites for IPT Pilot

At this point the State may decide to continue with IPT as a solution and provide it to smaller sites. IF this is the case the state and GE ITS will identify several (if not all) minor sites with data connectivity that will trunk back to the IPT pilot site for call processing. These sites will use a combination of IP Telephony and VoIP to provide a cost effective solution to voice and data convergence. These sites will be designed to use the Major site as its primary call processing point, and also be configured with redundant systems to enable call processing locally in the event of a failure. This will limit the states exposure in the event of a circuit failure, and limit the cost of adding a minor site to an IPT rollout.

Steps:

1. Identify minor sites that will use the IPT Pilot site as it's call processing hub.
2. Identify and upgrade port speeds if needed between sites.



3. Schedule rollout of each site.
4. Begin VoIP configuration at first site.
5. Configure IPT equipment for first site.
6. Test IPT equipment for first site.
7. Rollout IPT equipment at first site
8. Integrate with IP Voice Mail or Legacy Voice Mail
9. Complete testing
10. Add Site to RMM facilities.
11. Move to next site.

Exit Strategies:

At any point before step 5, the state of Arizona may exit from this phase and move to phase 5. The State may also choose not to complete all sites in the IPT rollout and leave remaining sites with their existing call processing systems or simply migrate them to a VoIP site in phase 5

At this point the state of Arizona should make a decision about how to proceed. IPT may be rolled out to additional sites following the patterns decided in phases 3 and 4. Phase 5 will entail connecting the remaining non IPT and VoIP sites to the converged network.

F. Phase 6 – Connect remaining sites via VoIP as needed.

In this phase, GE IT Solutions with the state will identify additional minor sites to be included in the VoIP rollout. These sites will trunk back to existing major VoIP sites. At this time port speeds will be increased as needed where required. These port speeds and data circuits should have already been identified in Phase 1.

Steps:

1. Identify minor sites with existing data connectivity for migration
2. Collect site-specific data including size and location and availability for IPT.
3. Categorize branches for VoIP migration based upon ease of migration and importance.
4. Migrate internal calls between major distribution sites to VoIP.
5. Migrate Long Distance Calling to VoIP
6. Provide redundant calling methods in the event of a data circuit failure.
7. Install Remote Monitoring and Management capabilities.

G. Phase 7 – Add additional Major IPT Sites if requested.

This phase will follow the procedure outlined in phases 3 for additional Major sites if requested/required.

H. Phase 8 – Add additional Minor IPT Sites if requested.

This phase will follow the procedures outlined in phase 4 for additional minor IPT sites if requested/required.

I. Phase 9 – Configure additional Applications and Services.

This phase would include the installation and rollout of additional IP based communications services such as IVR, Call Center, Personal Assistant and IP IM services. As with the previous phase, business requirements may have required that some of these applications be installed earlier in the rollout. In this event, several application phases may appear in the migration strategy. As with any phase, the State may decide during the rollout to change the applications installed or remove some services from the solution entirely.